BC
4760 #13

PCT

RAW SEQUENCE LISTING   DATE: 01/23/2004
PATENT APPLICATION: US/09/937,665A   TIME: 10:46:18

Input Set : A:\JJ1825.ST25.txt
Output Set: N:\CRF4\01232004\I937665A.raw

```
 3 <110> APPLICANT: Kutchan, Toni M.
 4       Zenk, Meinhart H.
 5       Atkins, David G.
 6       Fist, Anthony J.
 8 <120> TITLE OF INVENTION: CODEINONE REDUCTASE FROM ALKALOID POPPY
10 <130> FILE REFERENCE: JJ-1825
12 <140> CURRENT APPLICATION NUMBER: US 09/937,665A
13 <141> CURRENT FILING DATE: 2001-09-26
15 <150> PRIOR APPLICATION NUMBER: PCT/AU00/00249
16 <151> PRIOR FILING DATE: 2000-03-24
18 <150> PRIOR APPLICATION NUMBER: AU PP 9463
19 <151> PRIOR FILING DATE: 1999-03-26
21 <160> NUMBER OF SEQ ID NOS: 25
23 <170> SOFTWARE: PatentIn version 3.2
25 <210> SEQ ID NO: 1
26 <211> LENGTH: 20
27 <212> TYPE: DNA
28 <213> ORGANISM: Artificial Sequence
30 <220> FEATURE:
31 <223> OTHER INFORMATION: PCR Primer
34 <220> FEATURE:
35 <221> NAME/KEY: misc_feature
36 <222> LOCATION: (3)..(3)
37 <223> OTHER INFORMATION: n = A or G
39 <220> FEATURE:
40 <221> NAME/KEY: misc_feature
41 <222> LOCATION: (6)..(6)
42 <223> OTHER INFORMATION: n = T or C
44 <220> FEATURE:
45 <221> NAME/KEY: misc_feature
46 <222> LOCATION: (9)..(9)
47 <223> OTHER INFORMATION: n = T or C
49 <220> FEATURE:
50 <221> NAME/KEY: misc_feature
51 <222> LOCATION: (12)..(12)
52 <223> OTHER INFORMATION: n = A or C or T
54 <220> FEATURE:
55 <221> NAME/KEY: misc_feature
56 <222> LOCATION: (15)..(15)
57 <223> OTHER INFORMATION: n = T or G
59 <220> FEATURE:
60 <221> NAME/KEY: misc_feature
61 <222> LOCATION: (18)..(18)
```

P.6

ENTERED

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Input Set : A:\JJ1825.ST25.txt
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```
         62 <223> OTHER INFORMATION: n = T or C
         64 <400> SEQUENCE: 1
W-->     65 ganctnttna tnacntcnaa                                    20
         68 <210> SEQ ID NO: 2
         69 <211> LENGTH: 26
         70 <212> TYPE: DNA
         71 <213> ORGANISM: Artificial Sequence
         73 <220> FEATURE:
         74 <223> OTHER INFORMATION: PCR Primer
         77 <220> FEATURE:
         78 <221> NAME/KEY: misc_feature
         79 <222> LOCATION: (3)..(3)
         80 <223> OTHER INFORMATION: n = T or C
         82 <220> FEATURE:
         83 <221> NAME/KEY: misc_feature
         84 <222> LOCATION: (6)..(6)
         85 <223> OTHER INFORMATION: n = i
         87 <220> FEATURE:
         88 <221> NAME/KEY: misc_feature
         89 <222> LOCATION: (8)..(8)
         90 <223> OTHER INFORMATION: n = T or G
         92 <220> FEATURE:
         93 <221> NAME/KEY: misc_feature
         94 <222> LOCATION: (9)..(9)
         95 <223> OTHER INFORMATION: n = T or A
         97 <220> FEATURE:
         98 <221> NAME/KEY: misc_feature
         99 <222> LOCATION: (12)..(12)
        100 <223> OTHER INFORMATION: n = i
        102 <220> FEATURE:
        103 <221> NAME/KEY: misc_feature
        104 <222> LOCATION: (24)..(24)
        105 <223> OTHER INFORMATION: n = G or A
        107 <400> SEQUENCE: 2
W-->    108 ttnccncnng cnactgcaat ctgntg                             26
        111 <210> SEQ ID NO: 3
        112 <211> LENGTH: 21
        113 <212> TYPE: DNA
        114 <213> ORGANISM: Artificial Sequence
        116 <220> FEATURE:
        117 <223> OTHER INFORMATION: PCR Primer
        120 <220> FEATURE:
        121 <221> NAME/KEY: misc_feature
        122 <222> LOCATION: (4)..(4)
        123 <223> OTHER INFORMATION: n = T or C
        125 <220> FEATURE:
        126 <221> NAME/KEY: misc_feature
        127 <222> LOCATION: (10)..(10)
        128 <223> OTHER INFORMATION: n = T or C
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130 <220> FEATURE:
131 <221> NAME/KEY: misc_feature
132 <222> LOCATION: (16)..(16)
133 <223> OTHER INFORMATION: n = C or G
135 <220> FEATURE:
136 <221> NAME/KEY: misc_feature
137 <222> LOCATION: (19)..(19)
138 <223> OTHER INFORMATION: n = i
140 <400> SEQUENCE: 3
```
W--> **141 catntccacn tgattnacna c   21**
```
144 <210> SEQ ID NO: 4
145 <211> LENGTH: 29
146 <212> TYPE: DNA
147 <213> ORGANISM: Artificial Sequence
149 <220> FEATURE:
150 <223> OTHER INFORMATION: PCR primer
153 <220> FEATURE:
154 <221> NAME/KEY: misc_feature
155 <222> LOCATION: (3)..(3)
156 <223> OTHER INFORMATION: n = i
158 <220> FEATURE:
159 <221> NAME/KEY: misc_feature
160 <222> LOCATION: (6)..(6)
161 <223> OTHER INFORMATION: n = i
163 <220> FEATURE:
164 <221> NAME/KEY: misc_feature
165 <222> LOCATION: (9)..(9)
166 <223> OTHER INFORMATION: n = C or T
168 <220> FEATURE:
169 <221> NAME/KEY: misc_feature
170 <222> LOCATION: (12)..(12)
171 <223> OTHER INFORMATION: n = A or G
173 <220> FEATURE:
174 <221> NAME/KEY: misc_feature
175 <222> LOCATION: (15)..(15)
176 <223> OTHER INFORMATION: n = i
178 <220> FEATURE:
179 <221> NAME/KEY: misc_feature
180 <222> LOCATION: (18)..(18)
181 <223> OTHER INFORMATION: n = A or G
183 <220> FEATURE:
184 <221> NAME/KEY: misc_feature
185 <222> LOCATION: (22)..(22)
186 <223> OTHER INFORMATION: n = A or T
188 <220> FEATURE:
189 <221> NAME/KEY: misc_feature
190 <222> LOCATION: (23)..(23)
191 <223> OTHER INFORMATION: n = G or C
193 <220> FEATURE:
```

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Input Set : **A:\JJ1825.ST25.txt**
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```
194 <221> NAME/KEY: misc_feature
195 <222> LOCATION: (24)..(24)
196 <223> OTHER INFORMATION: n = i
198 <220> FEATURE:
199 <221> NAME/KEY: misc_feature
200 <222> LOCATION: (27)..(27)
201 <223> OTHER INFORMATION: n = i
203 <400> SEQUENCE: 4
```
W--> 204 gtngtnaanc angtnganat gnnnccnac   29
```
207 <210> SEQ ID NO: 5
208 <211> LENGTH: 21
209 <212> TYPE: DNA
210 <213> ORGANISM: Artificial Sequence
212 <220> FEATURE:
213 <223> OTHER INFORMATION: PCR primer
215 <400> SEQUENCE: 5
216 atggagagta atggtgtacc t                                            21
219 <210> SEQ ID NO: 6
220 <211> LENGTH: 21
221 <212> TYPE: DNA
222 <213> ORGANISM: Artificial Sequence
224 <220> FEATURE:
225 <223> OTHER INFORMATION: PCR primer
227 <400> SEQUENCE: 6
228 gacagtcctc acttaccatc t                                            21
231 <210> SEQ ID NO: 7
232 <211> LENGTH: 33
233 <212> TYPE: DNA
234 <213> ORGANISM: Artificial Sequence
236 <220> FEATURE:
237 <223> OTHER INFORMATION: Primer
239 <400> SEQUENCE: 7
240 atggctagca tggagagtaa tggtgtacct atg                               33
243 <210> SEQ ID NO: 8
244 <211> LENGTH: 33
245 <212> TYPE: DNA
246 <213> ORGANISM: Artificial Sequence
248 <220> FEATURE:
249 <223> OTHER INFORMATION: Primer
251 <400> SEQUENCE: 8
252 aagggatcca tccttctcat cccagaactc ttc                               33
255 <210> SEQ ID NO: 9
256 <211> LENGTH: 7
257 <212> TYPE: PRT
258 <213> ORGANISM: Artificial Sequence
260 <220> FEATURE:
261 <223> OTHER INFORMATION: Synthetic Construct
264 <220> FEATURE:
265 <221> NAME/KEY: misc_feature
```

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Input Set : **A:\JJ1825.ST25.txt**
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```
266 <222> LOCATION: (1)..(1)
267 <223> OTHER INFORMATION: Xaa can be any naturally occurring amino acid
269 <400> SEQUENCE: 9
W--> 271 Xaa Leu Gln Glu Leu Met Ala
272 1               5
275 <210> SEQ ID NO: 10
276 <211> LENGTH: 11
277 <212> TYPE: PRT
278 <213> ORGANISM: Artificial Sequence
280 <220> FEATURE:
281 <223> OTHER INFORMATION: Synthetic Construct
283 <400> SEQUENCE: 10
285 Val Leu His Gln Ile Ala Val Ala Arg Gly Lys
286 1               5                   10
289 <210> SEQ ID NO: 11
290 <211> LENGTH: 10
291 <212> TYPE: PRT
292 <213> ORGANISM: Artificial Sequence
294 <220> FEATURE:
295 <223> OTHER INFORMATION: Synthetic Construct
297 <400> SEQUENCE: 11
299 Asp Asp Asp Glu Leu Phe Ile Thr Ser Lys
300 1               5                   10
303 <210> SEQ ID NO: 12
304 <211> LENGTH: 16
305 <212> TYPE: PRT
306 <213> ORGANISM: Artificial Sequence
308 <220> FEATURE:
309 <223> OTHER INFORMATION: Synthetic Construct
311 <400> SEQUENCE: 12
313 Ile Pro Asp Val Val Asn Gln Val Glu Met Ser Pro Thr Leu Gly Gln
314 1               5                   10                  15
317 <210> SEQ ID NO: 13
318 <211> LENGTH: 7
319 <212> TYPE: PRT
320 <213> ORGANISM: Artificial Sequence
322 <220> FEATURE:
323 <223> OTHER INFORMATION: Synthetic Construct
326 <220> FEATURE:
327 <221> NAME/KEY: misc_feature
328 <222> LOCATION: (1)..(1)
329 <223> OTHER INFORMATION: Xaa can be any naturally occurring amino acid
331 <400> SEQUENCE: 13
W--> 333 Xaa Val Asn Glu Ile Pro Lys
334 1               5
337 <210> SEQ ID NO: 14
338 <211> LENGTH: 5
339 <212> TYPE: PRT
340 <213> ORGANISM: Artificial Sequence
```

RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 01/23/2004
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Please Note:

**Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.**

Seq#:1; N Pos. 3,6,9,12,15,18
Seq#:2; N Pos. 3,6,8,9,12,24
Seq#:3; N Pos. 4,10,16,18
Seq#:4; N Pos. 3,6,9,12,15,18,22,23,24,27
Seq#:9; Xaa Pos. 1
Seq#:13; Xaa Pos. 1
Seq#:14; Xaa Pos. 1
Seq#:15; Xaa Pos. 5

VERIFICATION SUMMARY   DATE: 01/23/2004
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Input Set : **A:\JJ1825.ST25.txt**
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```
L:65 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:108 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:141 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
L:204 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0
L:271 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0
L:333 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:0
L:353 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:0
L:373 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:0
```